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UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PUBLIC ROADS
DIVISION OF AGRICULTURAL ENGINEERING

S. H. McCrory, Chief

MONTHLY NEWS LETTER

WASHINGTON, D. C., JANUARY 20, 1927.

THE ANNUAL MEETING OF THE AMERICAN SOCIETY OF AGRICULTURAL ENGINEERS WILL BE HELD AT ST. PAUL, MINN., JUNE 22-25. UNDER THE PRESENT DEPARTMENT POLICY THE ATTENDANCE FROM THIS DIVISION WILL NECESSARILY BE LIMITED. THOSE PROGRAMMED TO PRESENT IMPORTANT PAPERS WILL HAVE THE PREFERENCE. IN ORDER TO AVOID POSSIBLE EMBARRASSMENT I WISH TO CAUTION ALL CONCERNED WITH REFERENCE TO ACCEPTING INVITATIONS TO PARTICIPATE WHERE PERSONAL ATTENDANCE IS INVOLVED, BEFORE FIRST BRINGING THE MATTER TO THE ATTENTION OF THE WASHINGTON OFFICE.

S. H. McCrory

PROFESSOR O. W. SJOGREN, PRESIDENT OF THE AMERICAN SOCIETY OF AGRICULTURAL ENGINEERS, WAS IN WASHINGTON JANUARY 13 AND 14, REPRESENTING THE SOCIETY AT THE MEETING OF THE AMERICAN ENGINEERING COUNCIL. ON JANUARY 13 A LUNCHEON WAS HELD AT THE COSMOS CLUB IN HONOR OF PRESIDENT SJOGREN WHICH WAS ATTENDED BY ALL OF THE SOCIETY MEMBERS IN THIS CITY. DR. ELWOOD MEAD INTRODUCED PRESIDENT SJOGREN WHO REVIEWED THE WORK THE SOCIETY HAS UNDER WAY AND EXPRESSED HIS EXPECTATION OF VALUABLE RESULTS TO COME FROM THE SOCIETY'S PROJECTS.

ONE OF THE MOST IMPORTANT WATER-RIGHT DECISIONS IN CALIFORNIA IN YEARS HAS JUST BEEN HANDED DOWN BY THE CALIFORNIA SUPREME COURT IN THE CASE OF AMELIA HERMINGHAUS ET AL. VS. SOUTHERN CALIFORNIA EDISON COMPANY ET AL.

PLAINTIFFS OWNED A TRACT OF 18,000 ACRES EXTENDING ALONG THE BANK OF SAN JOAQUIN RIVER FOR 20 MILES, CUT BY 22 SLOUGHS WHICH CARRIED THE RIVER WATER THROUGH AND OVER THE TRACT AND DELIVERED THE RESIDUE BACK INTO THE MAIN CHANNEL. DEFENDANT POWER COMPANY OWNED RIPARIAN LANDS ALONG THE UPPER REACHES OF THE RIVER AND TRIBUTARIES, AND CONTEMPLATED DEVELOPMENT OF ELECTRIC POWER BY BUILDING RESERVOIRS TO STORE THE WATER FOR LONG PERIODS OF TIME. PLAINTIFFS SOUGHT TO ENJOIN THE DIVERSION OF RIVER WATER FOR SUCH PURPOSE, CLAIMING THAT THE ENTIRE FLOW OF THE RIVER WAS NECESSARY TO FILL THE SLOUGHS AND MAKE POSSIBLE THE IRRIGATION OF THEIR LAND. DEFENDANTS CLAIMED THAT AS RIPARIAN OWNERS THEY WERE ENTITLED TO STORE WATER FOR POWER DEVELOPMENT.

THE COURT SUSTAINED THE RIPARIAN DOCTRINE, AS PROPOUNDED BY THE CALIFORNIA COURTS, AND UPHELD PLAINTIFFS' CONTENTION, HOLDING THAT THE SLOUGHS ARE WATERCOURSES, THAT THE BORDERING LANDS ARE RIPARIAN, AND THAT THEIR RIGHT TO THE USUAL FLOW OF WATER IN THE SLOUGHS IS SUBJECT ONLY TO A REASONABLE USE BY UPPER RIPARIAN OWNERS. THE COURT

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WASHINGTON, D. C., January 20, 1937.

The annual meeting of the American Society of Agricultural Engineers will be held at the Hotel Mayflower, January 22-25. Under the present Department policy the attendance from this division will necessarily be limited. Those programmed to present important papers will have the privilege. In order to avoid possible embarrassment with the Division all concerned with accepting invitations to participate where personal attendance is involved, should first bring the matter to the attention of the Washington Office.

S. H. McCaskey

Professor O. W. Glasgow, President of the American Society of Agricultural Engineers, was in Washington January 13 and 14, representing the Society at the meeting of the American Engineering Council. On January 13 a luncheon was held at the Mayflower Club in honor of President Glasgow which was attended by all of the Society members in this city. Dr. Glasgow was introduced by President Glasgow who reviewed the work the Society has under way and expressed his expectation of valuable results to come from the Society's projects.

One of the most important water-right decisions in California in years has just been handed down by the California Supreme Court in the case of Delta Land & Water Co. et al. vs. Southern California Edison Company et al. Plaintiffs owned a tract of 18,000 acres extending along the bank of San Joaquin River for 20 miles, cut by 25 ditches which carried the river water through and over the tract and delivered the residue back into the main channel. Defendant power company owned riparian lands along the upper reaches of the river and tributaries, and controlled development of electric power by building reservoirs to store the water for long periods of time. Plaintiffs sought to enjoin the diversion of river water for such purpose, claiming that the entire flow of the river was necessary to fill the ditches and make possible the irrigation of their lands. Defendants claimed that as riparian owners they were entitled to store water for power development. The court sustained the riparian doctrine, as propounded by the California courts, and upheld plaintiffs' contention, holding that the ditches are watercourses, that the riparian lands are riparian, and that their right to the usual flow of water in the ditches is subject only to a reasonable use by upper riparian owners. The court

HELD FURTHER THAT SUCH USE OF THE RIVER IS BENEFICIAL TO THE LAND AND IS A REASONABLE USE OF WATER, AND THAT TO REQUIRE PLAINTIFFS TO "INSTALL EXTENSIVE IMPROVEMENTS UPON NATURE'S METHOD FOR THE PURPOSE OF LESSENING THE QUANTUM OF THE SAID WATER TO BE USED BY THEM BELOW THAT FULL AMOUNT THEREOF TO WHICH THEY ARE IN THE NATURAL EXERCISE OF THEIR RIPARIAN RIGHT ENTITLED "WOULD BE "AN UTTERLY IMPRACTICABLE LIMITATION UPON THE DOCTRINE OF RIPARIAN RIGHTS."

THE COURT SET AN IMPORTANT PRECEDENT BY REFUSING TO EXTEND THE DOCTRINE OF RIPARIAN RIGHTS TO INCLUDE THE RIGHT OF RIPARIAN OWNERS TO STORE WATER INDEFINITELY.

SECTIONS OF THE CALIFORNIA WATER COMMISSION ACT RELATING TO RIPARIAN RIGHTS WERE CONSTRUED. THESE SECTIONS STATE THAT WATERS NOT NEEDED FOR USEFUL AND BENEFICIAL PURPOSES ON RIPARIAN LANDS ARE PUBLIC WATERS SUBJECT TO APPROPRIATION, AND THAT THE TERM "USEFUL OR BENEFICIAL PURPOSES" SHALL NOT BE CONSTRUED TO MEAN THE USE IN ANY ONE YEAR OF MORE THAN $2\frac{1}{2}$ ACRE-FEET PER ACRE "IN THE IRRIGATION OF UNCULTIVATED AREAS OF LAND NOT DEVOTED TO CULTIVATED CROPS." THE COURT HELD THAT THE ONLY POSSIBLE THEORY ON WHICH THE LEGISLATURE COULD SO LIMIT RIPARIAN RIGHTS WOULD BE AS A PROPER EXERCISE OF THE POLICE POWER OF THE STATE, WHICH COULD NOT BE USED TO DESTROY VESTED RIGHTS IN PRIVATE PROPERTY NOT INIMICAL TO PUBLIC WELFARE OR MORALS, BUT WHICH ON THE CONTRARY ARE BENEFICIAL; AND THAT PUBLIC POLICY CAN NOT BE INVOKED IN AID OF PRIVATE INSTITUTIONS. THESE PROVISIONS OF THE WATER COMMISSION ACT, THEREFORE, ARE INOPERATIVE.

W. M. HURST HAS RETURNED TO WASHINGTON AFTER HAVING BEEN IN THE FIELD CONTINUOUSLY SINCE LAST JUNE IN CONNECTION WITH THE COMBINE HARVESTER INVESTIGATION. JUST BEFORE COMING TO WASHINGTON MR. HURST MADE A TRIP THROUGH WESTERN TEXAS TO STUDY THE LARGE SCALE COTTON GROWING BEING INTRODUCED IN THAT SECTION. THE FOLLOWING IS AN EXCERPT FROM A REPORT WHICH HE MADE TO THIS OFFICE:

THE FARMALL TRACTOR IS BEING USED SUCCESSFULLY IN SOUTHWESTERN TEXAS. THE OPERATORS ARE WELL PLEASED AND THE DEALERS ARE EXPECTING GOOD SALES IN 1927, ALTHOUGH THE NUMBER IN USE WILL NOT INCREASE IN THE SAME RATIO AS LAST YEAR. THE RECORDS OBTAINED FROM COTTON GROWERS AT SAN ANGELO AND CORPUS CHRISTI WILL SHOW A NUMBER OF INTERESTING AND IMPORTANT POINTS IN FAVOR OF AND AGAINST TRACTOR FARMING. ONE SHOULD KNOW THE INDIVIDUAL, THE SIZE OF FARM, THE CHARACTER OF THE SOIL, IMPROVEMENTS, LIVESTOCK, ETC. BEFORE ADVISING THE FARMER TO BUY A TRACTOR. THE FARMALL TRACTOR IN COTTON PRODUCTION IS BRINGING ABOUT A REORGANIZATION OF FARMING PRACTICES. ITS USE WILL ABOUT DOUBLE THE PRODUCTION OF COTTON PER FARMER. IT IS BELIEVED THAT THE ACREAGE IN COTTON WILL INCREASE IN THOSE AREAS SUITED TO LARGE-SCALE PRODUCTION. THE TWO-MULE FARMER IN THE HILL SECTIONS WILL NOT BE ABLE TO COMPETE WITH THE LARGE-SCALE FARMERS IN THE MATTER OF COST OF PRODUCTION, CONSEQUENTLY THE LARGE-SCALE GROWERS WILL, IN TIME, PRODUCE THE LARGER PART OF OUR COTTON.

held further that such use of the river is beneficial to the land and is a reasonable use of water, and that to require plaintiffs to "install expensive improvements upon water" is a method for the purpose of lessening the quantity of the said water to be used by them below that full amount thereof to which they are in the natural exercise of their riparian right entitled "would be an utterly impracticable limitation upon the flowing of riparian rights."

The court set an important precedent by refusing to extend the doctrine of riparian rights to include the right of riparian owners to store water in a dam.

Section of the California Water Commission Act relating to riparian rights were construed. These sections state that waters not needed for useful and beneficial purposes on riparian lands are public waters, subject to appropriation, and that the term "useful or beneficial purposes" shall not be construed to mean the use in any one year or more than 25 consecutive years in the irrigation of uncultivated areas or land not devoted to cultivated crops. The court held that the only possible theory on which the legislature could so limit riparian rights would be as a proper exercise of the police power of the state, which could not be used to destroy vested rights in private property not inimical to public welfare or morals, but which on the contrary are beneficial and that public policy can not be invoked in aid of private institutions. These provisions of the Water Commission Act, therefore, are imperative.

W. M. Hurst has returned to Washington after having been in the field continuously since last June in connection with the combine harvester investigation. Just before coming to Washington Mr. Hurst made a trip through Western Texas to study the large scale cotton growing being introduced in that section. The following is an excerpt from a report which he made to this office:

The Fannall tract in El Paso County is being used successfully in southwestern Texas. The operators are well pleased and the dealers are expecting good sales in 1937, although the number in use will not increase in the same ratio as last year. The records obtained from cotton growers at San Angelo and Corpus Christi will show a number of interesting and important points in favor of and against tractor farming. One should know the individual, the size of farm, the character of the soil, improvements, livestock, etc. before advising the farmer to buy a tractor. The Fannall tractor in cotton production is bringing about a reorganization of farming practices. It will about double the production of cotton per farmer. It is believed that the acreage in cotton will increase in those areas suited to large scale production. The two-acre farmer in the hill sections will not be able to compete with the large-scale farmer in the matter of cost of production. Consequently the large-scale growers will, in time, produce the larger part of our cotton.

IT IS CONSIDERED POOR PRACTICE IN MINNESOTA TO USE ANY CLAY TILE THAT DOES NOT AT LEAST MEET THE STANDARD FROST TEST OF THE AMERICAN SOCIETY OF TILE MANUFACTURERS, IN VIEW OF THE FACT THAT ALMOST ALL OF THE SMALLER TILE IN THIS STATE ARE LAID ABOVE FROST LINE. TO MAKE SUCH TESTS IS QUITE TEDIOUS AS IT REQUIRES THE FREEZING AND THAWING OF INDIVIDUAL SPECIMENS FROM 24 TO 48 TIMES DEPENDING UPON THE GRADE OF TILE SPECIFIED. IT SO HAPPENS, THOUGH, THAT FOR TILE FROM ANY SINGLE PLANT THE RELATION OF FROST RESISTANCE TO ABSORPTION IS SUCH AS MAKES IT POSSIBLE TO SECURE, WITH REASONABLE CERTAINTY, A FROST RESISTANT PRODUCT BY SPECIFYING A LIMIT FOR ABSORPTION, ONCE SUCH A LIMIT HAS BEEN DETERMINED.

THE CO-OPERATIVE DRAIN TILE LABORATORY AT UNIVERSITY FARM, ST. PAUL, MINNESOTA, IN CHARGE OF D. G. MILLER, IS NOW EQUIPPED TO MAKE ENOUGH FROST TESTS TO FIX THE LIMIT OF ABSORPTION PERMISSIBLE FOR CLAY TILE, FROM EACH PLANT NOW FURNISHING SUCH MATERIAL IN ANY CONSIDERABLE QUANTITY FOR USE IN MINNESOTA, AND WORK ALONG THIS LINE IS AT PRESENT UNDER WAY.

TO MAKE POSSIBLE THESE STUDIES ON CLAY TILE, THE UNIVERSITY OF MINN. RECENTLY PURCHASED A SELF-CONTROLLED REFRIGERATOR CABINET IN WHICH TESTS OF 100 DRAIN TILE CAN BE CARRIED ON SIMULTANEOUSLY. THE SPECIMENS ARE FROZEN IN ALUMINUM PANS IN ONE-HALF INCH OF WATER, FOUR SAMPLES IN EACH PAN. A METAL RACK IS USED FOR EACH NINE PANS, THE IDEA BEING THAT WHEN THE TILE FRAGMENTS ARE FROZEN THE ENTIRE RACK, TOGETHER WITH THE PANS OF SPECIMENS, IS REMOVED FROM THE CABINET AND PLACED IN A TANK OF WATER WHERE IT REMAINS UNTIL ALL SPECIMENS ARE COMPLETELY THAWED. EACH RACK OF PANS IS THEN RETURNED TO THE CABINET AND THE OPERATION REPEATED. THE CABINET HAS SUFFICIENT REFRIGERATION TO PERMIT FREEZING ALL SAMPLES THREE TIMES EACH 24 HOURS. THIS OUTFIT, AS INSTALLED, HAS NOT ONLY SPEEDED UP MAKING THE TEST BUT ALSO HAS SO GREATLY REDUCED THE LABOR REQUIRED THAT RUNNING A SERIES OF TESTS NOW BECOMES A VERY INCIDENTAL PART OF THE WORK OF ONE MAN. BEFORE THE CABINET WAS INSTALLED IT REQUIRED NEARLY THE EQUIVALENT OF THE TIME OF ONE MAN TO CONDUCT SUCH A SERIES OF TESTS.

GEORGE R. BOYD, ON JANUARY 15 LEFT HIS HEADQUARTERS AT RICHMOND FOR MISSISSIPPI AND ARKANSAS WHERE HE WILL CONDUCT SOME PYROTOL DEMONSTRATIONS AND CONFER WITH STATE OFFICIALS RELATIVE TO FUTURE PLANS.

J. G. SUTTON IS IN WASHINGTON, WORKING UP THE RESULTS OF HIS TWO YEARS' WORK ON SUGAR CANE IRRIGATION IN LOUISIANA. THIS PROJECT WILL NOT BE CONTINUED THROUGH 1927.

C. D. KINSMAN, ON JANUARY 6, ADDRESSED A MEETING AT LINCOLN, NEBR., HELD IN CONNECTION WITH "FARMERS' WEEK" ON THE RESULTS SECURED FROM THE STUDY OF THE COMBINED HARVESTER-THRESHER.

B. S. CLAYTON REPORTS VERY HIGH RUN-OFF DURING THE LATTER PART OF DECEMBER FROM SOME OF THE AREAS ON WHICH HE IS MAKING RUN-OFF MEASUREMENTS IN MISSISSIPPI. A SIX-INCH RAIN FALLING IN 56 HOURS GAVE A MAXIMUM DISCHARGE OF 6660 SECOND-FOOT AT HEAD, MISS., FROM A DRAINAGE AREA OF 463 SQUARE MILES. THIS IS AT THE RATE OF 14.4 SECOND-FOOT PER SQUARE MILE. THE SAME RAIN PRODUCED A RATE OF DISCHARGE OF 33 SECOND-FOOT PER SQUARE MILE FROM THE HORSESHOE BAYOU DRAINAGE AREA. THE YAZOO RIVER REACHED RECORD STAGES, FLOODING LARGE AREAS AROUND AND BELOW GREENWOOD, MISS.

C. E. RAMSER, AT THE REQUEST OF THE IOWA ENGINEERING SOCIETY, IS PREPARING A PAPER ON THE EROSION AND SILTING OF DREDGED DRAINAGE DITCHES TO BE

It is considered poor practice in Minnesota to use any clay tile that does not at least meet the standard test of the American Society of Tile Manufacturers, in view of the fact that almost all of the smaller tile in this state are laid above frost line. It was such tests as to require the freezing and thawing of individual specimens from 25 to 48 times depending upon the grade of tile specified. It is so arranged, though, that for tile from any single plant the relation of frost resistance to absorption is such as makes it possible to select, with reasonable certainty, a frost resistant product by specifying a limit for absorption, once such a limit has been determined.

The Co-operative Grain Tile Laboratory at University Farm, St. Paul, Minnesota, in charge of D. G. Miller, is now equipped to make enough frost tests to fix the limit of absorption permissible for clay tile from each plant now furnishing such material in any considerable quantity for use in Minnesota, and work along this line is at present under way.

To make possible these studies on clay tile, the University of Minnesota recently purchased a well-controlled refrigeration cabinet in which tests of 100 grain tile can be carried on simultaneously. The specimens are frozen in aluminum pans in one-half inch of water, four samples in each pan. A metal rack is used for each nine pans, the idea being that when the tile fragments are frozen the entire rack, together with the pans of specimens is removed from the cabinet and placed in a tank of water where it remains until all specimens are completely thawed. Each rack of pans is then returned to the cabinet and the operation repeated. The cabinet has sufficient refrigeration to permit freezing all samples three times each 24 hours. This outfit, as installed, was not only speeded up during the test but also has so greatly reduced the labor required that running a series of tests now requires a very important part of the work of one man. Before the cabinet was installed it required nearly the equivalent of the time of one man to conduct such a series of tests.

George R. Boyd, on January 15 left his headquarters at Richmond for Minneapolis and St. Paul where he will conduct some frost demonstrations and confer with state officials relative to future plans.

J. G. Sutton is in Washington, working on the results of his two years' work on soil water irrigation in Louisiana. This project will not be continued through 1927.

D. D. Newman, on January 8, addressed a meeting at Lincoln, Nebraska, held in connection with "Farmers' Week". On the results secured from the study of the good and bad harvest conditions.

B. S. Clayton reports very high runoff during the latter part of December from some of the areas on which he is making runoff measurements in Mississippi. A striking rain falling in 24 hours gave a maximum discharge of 6000 cfs. at the head of the Mississippi River. The same area, this is at the rate of 1.4 seconds per square mile from the main produced a rate of discharge of 33 seconds per square mile from the Horseshoe Bayou drainage area. The Yazoo River reached record stages, flooding large areas around and below Greenwood, Miss.

G. E. Ramsay, at the request of the Iowa Engineering Society, is preparing a paper on the erosion and silting of dredged drainage ditches to be

PRESENTED AT THE ANNUAL MEETING OF THE SOCIETY ON JANUARY 26.

D. L. YARNELL HAS BEGUN THE COMPUTATIONS IN CONNECTION WITH HIS TESTS OF FLOW OF WATER AROUND BENDS. IN COMPARING DISCHARGES OBTAINED WITH PITOT TUBES WITH THOSE OBTAINED BY WEIGHT HE REPORTS THAT 50 PER CENT OF THE TESTS CHECK THE WEIGHTED QUANTITIES WITHIN 3 PER CENT AND 70 PER CENT CHECK WITHIN 5 PER CENT. THROUGHOUT THE TESTS HE HAS USED A COEFFICIENT OF 0.86 FOR THE PITOT TUBE.

R. G. HEMPHILL HAS SUBMITTED A REPORT TO THE BERKELEY OFFICE COVERING THE COOPERATIVE IRRIGATION INVESTIGATIONS IN TEXAS, 1925-1926, INCLUDING STUDIES OF THE USE OF WATER IN RICE IRRIGATION AND SILT IN TEXAS STREAMS. IN DISCUSSING VOLUME-WEIGHT DETERMINATIONS OF SILT, MR. HEMPHILL STATES: "A WIDE VARIATION IN VOLUME-WEIGHT WAS SHOWN BY SAMPLES TAKEN FROM DIFFERENT TYPES OF DEPOSITS, AND IT SEEMS CLEAR THAT IN FIXING A PROPER CONVERSION FACTOR DUE CONSIDERATION MUST BE GIVEN TO THE FINENESS OF THE SILT, FOR INSTANCE, 15 SAMPLES FROM EXPOSED BARS OF COARSE SILT, COMPARATIVELY DRY AVERAGED 110.22 LBS. PER CUBIC FOOT OR 91.69 LBS. PER CUBIC FOOT OF THE DRY SILT. FOR EXPOSED BARS OF FINER SILT THE RESPECTIVE AVERAGE WEIGHTS WERE 105.08 AND 80.81 LBS., FOR SATURATED SILT OR SUBMERGED NEAR THE WATER LINE THE FIGURES WERE 93.24 AND 55.12 LBS. RESPECTIVELY, AND FOR LIQUID MUD FROM THE BOTTOM OF THE RESERVOIR THE SAMPLES AVERAGED 80.01 AND 31.39 LBS. RESPECTIVELY.

CARL ROHWER, REPORTING ON EXPERIMENTS ON LOSS OF WATER BY EVAPORATION, STATES: "THE RESULTS OF THE SECOND MONTH'S OBSERVATIONS, EXCLUDING THE PERIODS WHEN HEAVY WINDS CAUSED CONSIDERABLE SPLASH FROM THE RESERVOIR AND THOSE PERIODS WHEN UNCERTAINTY AROSE ON ACCOUNT OF HEAVY SNOWFALL, WERE AS FOLLOWS:

	INCHES
LARGE RESERVOIR, 84.6' DIAMETER	1.418
FLOATING TANK, 3' SQUARE	1.691
U. S. WEATHER BUREAU STANDARD TANK 4' DIAMETER	1.654
COLORADO TYPE BURIED TANK, 3' SQUARE	1.302

A. L. FELLOWS ATTENDED THE CONVENTION OF THE NEBRASKA STATE IRRIGATION ASSOCIATION AT NORTH PLATTE AND DELIVERED AN ADDRESS ON "THE WORTH OF IRRIGATION".

R. L. PARSHALL STATES THAT THE INSTALLATION OF IMPROVED VENTURI FLUMES ON THE SYSTEM OF FORT LYON CANAL COMPANY, IN ARKANSAS VALLEY, COLO., GAVE MARKED SUCCESS DURING THE PAST SEASON, AND AS A RESULT A LARGE NUMBER WILL BE IN USE DURING THE COMING SEASON.

M. C. BETTS PRESENTED A PAPER ON "FARM POTATO STORAGE CONSTRUCTION" BEFORE THE AMERICAN POTATO GROWERS' ASSOCIATION WHICH MET IN PHILADELPHIA DECEMBER 28-30, IN CONJUNCTION WITH THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

M.A.R. KELLEY ATTENDED THE ANNUAL MEETING OF THE AMERICAN SOCIETY FOR ANIMAL PRODUCTION AT CHICAGO AND READ A PAPER ENTITLED "LENGTH OF THE STABLING SEASON", IN WHICH HE GAVE STATISTICS RELATIVE TO THE AVERAGE TIME DAIRY COWS ARE HOUSED IN DIFFERENT SECTIONS OF THE UNITED STATES.

